tients suffer impairment in their abilities to think and to maintain social relationships. Indeed, their social networks are smaller than those of normal people. It therefore makes sense to develop interventions that help these networks better support their patient members.

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Childhood Depression—A Recent Phenomenon?

ADOLESCENT DEPRESSION and some of its manifestations in violence, anger, suicide and substance abuse have been described and a good deal of research conducted into the etiology, diagnosis and treatment. Only within the past five years or so has any attention been paid to depression in children, with the documentation of both severe depression with suicidal ideation and suicide attempts in young children of primary school age.

In several adolescent suicide studies, an effort to retrospectively study the behaviors and school records of actual suicides has revealed some common diagnostic criteria. Review of the cumulative records of ten suicidal adolescents—that is, actual suicides and severe previous attempts—shows that by the third, fourth and fifth grades there were signs of academic failure, the children were described as loners without friends and almost every teacher described them as looking sad. Parent conferences showed chronic alcoholism of one or both parents or divorce (or both). Death of a parent or sibling was also frequently noted. Histories of child physical and sexual abuse were found in four of the ten cumulative records.

A current review of the indicators of childhood abuse has been important in helping educators to identify children at risk for abuse and subsequent depression or antisocial, angry behavior toward children and adults.

Recently depression has been documented in preschool children in the general population. The Children's Affective Disorder Scale was administered and a parent rating scale given; teachers' observations of sad, isolated or overly hostile children were closely correlated with the results of the tests.

Treatment of children who are depressed has reportedly been successful. Similarly aged children with similar problems have benefited from group therapy with a trained group leader. For very young children, activity or play groups provide peer interaction and tangible signs of adult concern and caring. Family therapy or, at least, work with a parent or parents to demonstrate how caring can be shown by attention to a child's productions of drawings or play is effective in reducing depression. Playing games is often mutually enjoyable to parents and children after the parents have been helped to be playful. Dealing with abusive parents by reporting them to child protective services may or may not remove the abusive parent but should halt the abuse once a child and family are being monitored.

The use of antidepressive medications, especially the tricyclic antidepressants, has proved effective in doses of 25 to 50 mg per day, depending on the size of a child.

We are obviously not talking about childhood depression due to hospital admission for acute physical disease or depression due to dealing with chronic illness like diabetes or life-threatening diseases. Physicians who see children and families can often identify the child who looks sad or despondent or who is nonresponsive to anyone's efforts to engage the child in conversation. At our Children's Psychiatric Hospital where children from age 3 years to 15-year-old adolescents are treated as inpatients, many young depressed patients have been referred by physicians. These are children who have experienced multiple stresses. Some have been abused and have also lost a parent through divorce or death. Many of these children not only appear sad but have great difficulty in trusting adults and have sleeping problems, generally nightmares. Some of these children have retreated into psychotic behavior, hearing threatening voices and staring off into space as if they have visual hallucinations. These children have done well with a combination of antidepressant medications and a caring staff, effective group and individual therapy and an effective special education program that promotes a better self-image through increased competence.

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Antidepressant Treatment for Bulimia

CERTAIN ANTIDEPRESSANT MEDICATIONS, particularly imipramine hydrochloride, desipramine hydrochloride and the monoamine oxidase inhibitor phenelzine sulfate, are useful in treating bulimia, the binge-purge syndrome. Double-blind studies have shown the superiority of an active medication over placebo, whether or not the bulimic patient is clinically depressed. Although as many as 75% of bulimic patients may be depressed, anxiety and personality disorders often coexist as well. The mechanisms of action of the medications are unclear, but may be through effects on anxiety or depression or more directly.

While medications may be effective, individual and group therapies using cognitive-behavioral methods that attend to eating patterns, nutrition and psychological issues have about the same success rate as does the use of medications alone. Nevertheless, several of the medication studies were conducted primarily with patients for whom previous trials of psychotherapy had failed.

The prudent approach to treating bulimia is to provide both psychological and nutritional counseling with a carefully worked out meal plan. If a patient does not improve within

one to two months, antidepressant therapy should be tried. An antidepressant regimen may be started immediately for patients who present with serious depression or for those whose disorder failed to resolve with competent eating-disorders counseling.

The average medication doses are similar to those prescribed for depression—that is, 200 to 300 mg per day of tricyclic antidepressants or full therapeutic dosages of monoamine oxidase inhibitors, such as 45 to 90 mg per day of phenelzine. A small dose is started at bedtime, after a patient is unlikely to purge. The dosage should be gradually raised over the next few days to a therapeutic range. For any of these medications a minimum of six weeks is necessary for an adequate drug trial. Side effects occur with all of the antidepressant medications and may be particularly common with the monoamine oxidase inhibitors.

Trials with several different medications may be necessary. As many as 50% of patients may become asymptomatic. Not every patient will respond, but most will have at least some symptomatic improvement.

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The Dopamine Hypothesis Revisited

THE DOPAMINE HYPOTHESIS of schizophrenia originally proposed that a functional overactivity of the dopamine neurotransmitter system was responsible for the symptoms of schizophrenia. There has been much evidence to support this theory although most has been inferential and not direct in nature. Early work showed a relationship between neuroleptic drugs and central nervous system (CNS) dopamine systems by observing that neuroleptic administration increased the accumulation of dopamine metabolites in rat brain. With the development of sophisticated receptor-binding techniques, it was found that the affinity of individual antipsychotic drugs for the butyrophenone-labeled, non-adenyl cyclase D2 receptor was closely correlated with their potency as antipsychotics. A major criticism of the relevancy of these findings, however, has been the observation that neuroleptic drugs require weeks to months to be maximally effective.

In recent years, preclinical studies have begun to examine the slow-to-develop effects of neuroleptic drugs on CNS dopamine systems. Evidence from both electrophysiologic and biochemical studies comparing short- and long-term administration schedules suggests that dopamine neurons respond differently with different schedules. Short-term administration of neuroleptics results in increased dopamine neuronal firing, whereas long-term use produces substantially decreased rates. Plasma studies of homovanillic acid (HVA), a major dopamine metabolite in humans, have shown a time-dependent relationship between the levels of plasma HVA and clinical symptoms in schizophrenia. Furthermore, a recent positron emission tomography study found that the quantity of D2 dopamine receptors showed a greater increase in both drug-treated and drug-naive schizophrenic subjects than in controls.

This recent evidence supports the dysfunctional nature of the CNS dopamine system in schizophrenia. Current research will provide more answers and expand our knowledge to include systems that interact with dopamine in patients with schizophrenia.

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Psychopharmacology of the Aged

AT LEAST 20% of people 65 years of age or older suffer from psychiatric symptoms that often abate with drug treatment. Nearly a third of older patients admitted to hospital for medical-surgical care receive psychotropic drugs; the frequency for institutionalized elderly is more than 90%.

The high rate of physical illness in the upper age groups calls for comprehensive evaluation and treatment of underlying medical conditions that may cause mental symptoms before initiating any medication treatment. These physical illnesses and physiologic changes associated with aging will alter absorption, distribution, metabolism and excretion so that drug response and toxicity vary. Dosages, therefore, should begin at a lower range than for younger adults and be increased gradually to minimize side effects and identify low-dose responders.

The limited data from well-controlled clinical trials and clinical experience indicate that most psychotropic drugs used for younger adults are also effective in the elderly. Given the similar efficacy within psychotropic drug classes, the choice of a particular medication depends on its side-effect profile. Low doses of a high-potency neuroleptic drug, such as 0.5 mg to 2 mg of haloperidol, often lessen agitation and psychosis and have few anticholinergic and cardiovascular effects. Clinical trials indicate that antidepressant response rates for geriatric depression range from 30% to 80%. Serotonergic agents, such as trazodone hydrochloride or doxepin hydrochloride starting at 25 mg, appear to help agitated depressions; noradrenergic agents, such as desipramine hydrochloride or nortriptyline hydrochloride, improve retarded depressions. Two recent studies have reported pretreatment systolic orthostatic blood pressure drops of 10 mm of mercury or more to predict a favorable outcome with several tricyclic agents. Benzodiazepines are useful in treating insomnia (for instance, temazepam, 15 mg, an hour before bedtime) or daytime anxiety (lorazepam in 0.5-mg increments). Benzodiazepines with long half-lives tend to accumulate in the blood, are more likely to cause side effects and their use should be avoided.

Nonpharmacologic measures should always be attempted before using medications and often complement pharmaco-